

32. (New) The device of claim 30, wherein the height of the frame in the closed configuration is greater than the height of the frame in the open configuration.

33. (New) The device of claim 29, wherein at least one rod received by a first hub is pivotable about a first axis and wherein at least one other rod received by the first hub is pivotable about a second axis substantially perpendicular to the first axis.

34. (New) The device of claim 29, wherein at least one rod received by a second hub is pivotable about a third axis and wherein at least one other rod received by the second hub is pivotable about a fourth axis substantially perpendicular to the third axis.

REMARKS

I. Status of the Claims

By this Amendment, claims 1, 13, and 20 have been amended and new claims 29-34 have been added. Thus, claims 1-9, 13, and 20-34 are pending. Claims 22-28 have been withdrawn from consideration as being drawn to a non-elected invention.

II. Rejection Under 35 U.S.C. § 112

In the Office Action, claims 1-9, 13, and 21 were rejected under 35 U.S.C. § 112, first paragraph. In particular, it was asserted in the Office Action at page 2 that "[w]hen the device collapses...it doesn't collapse in height but becomes more upright or lengthens."

Claim 1, as amended, recites a combination of elements, including "the containment device articulating along three axes, whereby the containment device

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changes between the compact and open configurations in height, length and width.” Applicant respectfully submits that the combination of elements recited in claim 1 is described in the as-filed specification and shown at least in as-filed Figs. 1 and 2. Thus, Applicant respectfully submits that the pending claims fully satisfy 35 U.S.C. § 112, first paragraph, and that the rejection should be withdrawn.

III. Rejections Under 35 U.S.C. § 103(a)

A. Claims 1-9, 20, 21, and 29-34 are patentable over Zeigler

In the Office Action, claims 1-9, 20, and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,444,946 to Zeigler. This rejection is respectfully traversed based on the following comments. Further, with respect to claims 29-34, Applicant respectfully submits that they are allowable, along with claims 1-9, 20, and 21, in view of the following comments.

To establish a prima facie case of obviousness under 35 U.S.C. § 103, three basic criteria must be satisfied. First, “there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.” M.P.E.P. § 2143. “Second, there must be a reasonable expectation of success.” Id. Third, “the prior art reference (or references when combined) must teach or suggest all the claim limitations.” Id. Because none of the three basic criteria have been satisfied, Applicant respectfully submits that a prima facie case of obviousness has not been established and that the rejection should be withdrawn.

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1. There is no suggestion or motivation to modify Zeigler

First, there is no suggestion or motivation in the Zeigler reference or in the knowledge generally available to one of ordinary skill in the art to modify the Zeigler reference to attain Applicant's combination recited in independent claims 1, 20, and 29.

Zeigler teaches an "expandable and collapsible shelter...formed from a series of interconnected expandable and collapsible modules", where "[e]ach module is formed from interconnected strut pairs pivotably attached at their ends to hub assemblies" (see Abstract and Figs. 5-7). Further, "[i]nner and outer covers corresponding to the shapes of the frameworks...are provided" that "form a thermal barrier and are preferably made of a flexible, waterproof, fire-resistant, and ultraviolet resistant material" (see col. 3, line 68 - col. 4, line 5 and Figs. 1C and 2C).

Applicant's claim 1 recites a containment device comprising a combination of elements, including at least "rods, each rod being pivotally joined to another rod by a scissors connection intermediate the ends of said rod", "hubs, each hub receiving an end portion of at least two rods", and "a canopy connected to at least two hubs and residing in the receptacle region of the erect open containment device."

Applicant's claim 20 recites a containment device comprising a combination of elements, including at least "rods, each rod being pivotally joined to another rod by a scissors connection intermediate the ends of said rod", "hubs, each hub receiving an end portion of at least two rods", and "a canopy affixed to at least two hubs proximate the top portion of the containment device in the open erect configuration to form the receptacle region capable of receiving and retaining hazardous chemicals."

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Further, Applicant's claim 29 recites a containment device comprising a combination of elements, including at least "a frame movable between a closed configuration...and an open configuration, in which the frame forms a plurality of walls defining a central space", wherein the frame comprises "a plurality of rods, each rod comprising a first end, a second end, and an intermediate portion, wherein the intermediate portion of each rod is pivotably connected to the intermediate portion of another rod", "a plurality of first hubs, each first hub receiving first ends of at least two respective rods", and "a plurality of second hubs configured to engage a support surface, each second hub receiving second ends of at least two respective rods", and "a receptacle comprising a plurality of attachment portions secured to respective first hubs, wherein the receptacle collapses when the frame is in the closed configuration and the receptacle forms a containment volume in the central space when the frame is in the open configuration."

In the Office Action at page 3, although it was acknowledged that Zeigler does not teach a "containment device", it was asserted that "[i]t would have been obvious to invert (turn up-side-down) the portable shelter assembly in order to form a containment device which can be rapidly deployed so that a container could be provided to hold items."

This unsupported assertion finds no basis in the teachings of Zeigler and goes against the knowledge of one of ordinary skill in the art. The disclosure of Zeigler describes a shelter formed from expandable and collapsible modules. There is no teaching of arranging the shelter in any orientation other than that shown in Figs. 1A-

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1D, 2B, 2C, 3, 10E, and 10F, much less in an inverted orientation for use as a container for hazardous chemicals.

In fact, Zeigler teaches away from using the shelter in an inverted orientation as a container for hazardous waste. In a passage at col. 16, lines 47-56, Zeigler states:

"The shelters 21, 23, 25, and 27 [every shelter embodiment disclosed] are generally cylindrical in shape, when erected, and have **open ends**. The ends of the shelters 21, 23, 25, and 27 may be closed off with suitable coverings, preferably including doorways, or the shelters may be combined with one another, such as by being joined together at ends or sides of one another with means such as zipper fasteners or VELCRO TM hook and loop fasteners attached to the covers 37 and 37, to form larger shelters for purposes such as mobile hospitals."

The open-ended shelter of Zeigler is totally unsuitable for use in any capacity as a containment device. Any waste poured into the inverted shelter of Zeigler would leak out of the open ends. Further, Zeigler provides no teaching of a chemical resistant canopy. Thus, the claim rejection is not based on a suggestion or motivation in Zeigler or in the knowledge generally available to one of ordinary skill in the art to modify the reference, as required by the M.P.E.P. Rather, the rejection relies on hindsight reconstruction and the teaching of Applicant's own disclosure to find the motivation needed to modify the Zeigler reference.

Because there is no suggestion or motivation to modify the Zeigler reference, as required by M.P.E.P. § 2143, Applicant respectfully submits that a prima facie case of obviousness has not been established and that the rejection should be withdrawn.

2. There is no reasonable expectation of success in the modified device

Second, there is no reasonable expectation of success in inverting the shelter of Zeigler and using it as a hazardous waste container. In addition to the reasons

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described above, namely, the open-ended configuration and the degradable canopy material, the shape of the shelter and other design features would render the shelter unusable in a capacity as a containment device.

As described above and as shown in Figs. 1A-1D, 2B, 2C, 3, 10E, and 10F, the shelter is "generally cylindrical in shape." For use in an arch-shaped structure, as taught by Zeigler, this arrangement provides stability and an efficient distribution of loads. However, when inverted, as suggested by the Examiner, this shape would be particularly unstable and would tend to tip to one side or the other. This instability would only increase if any material, such as hazardous waste, was added to the inside of the structure. Such a container has essentially no reasonable expectation of success.

Further, as described above, the device of Zeigler is designed for use in an arch-shaped support that distributes externally applied loads. An inverted arch does not distribute structural loads in a similar fashion. When an arch is inverted, loads applied to the inside of the arch tend to push outwardly and collapse the arch. Accordingly, an inverted arch is unable to withstand even the design loads of a properly oriented arch. In a non-limiting example of a hazardous waste containment scenario, placing oil in a canopy disposed in the inverted arch of Zeigler would apply an outwardly-acting load that would far exceed the design loads of the structure of Zeigler and would collapse the canopy.

Because there is no reasonable expectation of success in the modified device of Zeigler, as required by M.P.E.P. § 2143, Applicant respectfully submits that a prima facie case of obviousness has not been established and that the rejection should be withdrawn.

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3. Zeigler fails to teach or suggest all the claim limitations

Third, Zeigler fails to teach or suggest all the claim limitations recited in Applicant's independent claims 1, 20, and 29.

In particular, Zeigler fails to teach or suggest Applicant's combination recited in claim 1, including at least a "rapid deploy containment device adapted to receive and retain hazardous waste", "the containment device in the erect open configuration forming a receptacle region, the containment device comprising rods, each rod being pivotally joined to another rod by a scissors connection intermediate the ends of said rod", "hubs, each hub receiving an end portion of at least two rods", and "a canopy connected to at least two hubs and residing in the receptacle region of the erect open containment device."

Further, Zeigler fails to teach or suggest Applicant's combination recited in claim 20, including at least a "rapid deploy containment device adapted to receive and retain hazardous waste", "the containment device comprising rods, each rod being pivotally joined to another rod by a scissors connection intermediate the ends of said rod", "hubs, each hub receiving an end portion of at least two rods", and "a canopy affixed to at least two hubs proximate the top portion of the containment device in the open erect configuration to form the receptacle region capable of receiving and retaining hazardous chemicals."

Finally, Zeigler fails to teach or suggest Applicant's combination recited in claim 29, including at least "a frame movable between a closed configuration...and an open configuration, in which the frame forms a plurality of walls defining a central space", wherein the frame comprises "a plurality of rods, each rod comprising a first end, a

second end, and an intermediate portion, wherein the intermediate portion of each rod is pivotably connected to the intermediate portion of another rod", "a plurality of first hubs, each first hub receiving first ends of at least two respective rods", and "a plurality of second hubs configured to engage a support surface, each second hub receiving second ends of at least two respective rods", and "a receptacle comprising a plurality of attachment portions secured to respective first hubs, wherein the receptacle collapses when the frame is in the closed configuration and the receptacle forms a containment volume in the central space when the frame is in the open configuration."

In the Office Action at page 3, it was asserted that "the rods are joined by a scissors connection intermediate their ends." However, according to Zeigler, not all of the rods are joined to other rods. See for example, Zeigler at col. 4, line 67 - col. 5, line 12:

"With reference to Fig. 7, it is seen that the module 61 includes four interconnected 'scissors' or pairs 63, 65, 67, and 69 of struts. The strut pair 63 includes struts 71 and 73; the strut pair 65 includes struts 75 and 77; the strut pair 67 includes struts 79 and 81; and the strut pair 69 includes struts 83 and 85. **Struts 75 and 77 and struts 83 and 85 of the strut pairs 65 and 69, respectively, are preferably pivotably pinned to one another by means 87 such as pins or rivets.**" (emphasis added)

As described in the above passage from Zeigler and, as shown in Fig. 7, only two of the four pairs of struts are pivotably pinned in the module of Zeigler. The other two pairs of struts are not even connected. Thus, Zeigler fails to teach or suggest the element of Applicant's claims 1 and 20 reciting "each rod being pivotally joined to another rod by a scissors connection intermediate the ends of said rod" and the element

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of Applicant's claim 29 reciting "the intermediate portion of each rod is pivotably connected to the intermediate portion of another rod."

Because Zeigler fails to teach or suggest all the claim limitations recited in Applicant's independent claims 1, 20, and 29, as required by M.P.E.P. § 2143, Applicant respectfully submits that a prima facie case of obviousness has not been established and that the rejection should be withdrawn.

B. Claims 1-9, 20, 21, and 29-34 are patentable over Esser

In the Office Action, claims 1-9, 20, and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,943,837 to Esser et al. (Esser). This rejection is respectfully traversed based on the following comments. Further, with respect to claims 29-34, Applicant respectfully submits that they are allowable, along with claims 1-9, 20, and 21, in view of the following comments.

As discussed above with reference to Zeigler, because none of the three basic criteria have been satisfied, Applicant respectfully submits that a prima facie case of obviousness has not been established and that the rejection should be withdrawn.

1. There is no suggestion or motivation to modify Esser

First, there is no suggestion or motivation in the Esser reference or in the knowledge generally available to one of ordinary skill in the art to modify the Esser reference to attain Applicant's combination recited in independent claims 1, 20, and 29.

Esser teaches a "quick erect shelter frame comprising a plurality of one piece hubs, a plurality of struts pivotally mounted to respective hubs in a lattice formation, a cable extending around the hubs, and a rotatably mounted means fastened to each hub for guiding the cable" (see col. 3, lines 14-19).

In the Office Action at page 4, although it was acknowledged that Esser does not teach a "containment device", it was asserted that "[i]t would have been obvious to invert (turn up-side-down) the quick erect shelter apparatus in order to form a containment device which can be rapidly deployed so that a container could be provided to hold items."

This unsupported assertion finds no basis in the teachings of Esser and goes against the knowledge of one of ordinary skill in the art. The disclosure of Esser describes a shelter formed from an articulate frame. There is no teaching of arranging the shelter in any orientation other than that shown in Figs. 1, 2a, and 8a, much less in an inverted orientation for use as a container for hazardous chemicals.

In fact, Esser teaches away from using the shelter in an inverted orientation as a container for hazardous waste. As shown in Figs. 1, 2a, and 8a, the shelter of Esser, like that of Zeigler, has open ends. As discussed above with reference to Zeigler, such an open-ended shelter is totally unsuitable for use in any capacity as a containment device. Any waste poured into the inverted shelter would leak out of the open ends. Further, Esser provides no teaching of a chemical resistant canopy.

Thus, as discussed above, the claim rejection is not based on a suggestion or motivation in Esser or in the knowledge generally available to one of ordinary skill in the art to modify the reference, as required by the M.P.E.P. Rather, the rejection relies on hindsight reconstruction and the teaching of Applicant's own disclosure to find the motivation needed to modify the Esser reference.

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Because there is no suggestion or motivation to modify the Esser reference, as required by M.P.E.P. § 2143, Applicant respectfully submits that a prima facie case of obviousness has not been established and that the rejection should be withdrawn.

2. There is no reasonable expectation of success in the modified device

Second, there is no reasonable expectation of success in inverting the shelter of Esser and using it as a hazardous waste container. In addition to the reasons described above, namely, the open-ended configuration and the degradable canopy material, the shape of the shelter and other design features would render the shelter unusable in a capacity as a containment device.

As shown in Figs. 1, 2a, and 8a, the shelter of Esser has a substantially rounded upper surface. Therefore, as discussed above with reference to Zeigler, when the shelter is inverted, as suggested by the Examiner, this shape would be particularly unstable and would tend to tip to one side or the other. This instability would only increase if any material, such as hazardous waste, was added to the inside of the structure. Such a container has essentially no reasonable expectation of success.

Further, as with the device of Zeigler, the inverted shelter of Esser would be unable to withstand loads applied from within, such as the weight of a hazardous chemical contained in a canopy inside the shelter. If a material was added to a canopy disposed in the inverted shelter of Esser, the shelter would collapse.

Because there is no reasonable expectation of success in the modified device of Esser, as required by M.P.E.P. § 2143, Applicant respectfully submits that a prima facie case of obviousness has not been established and that the rejection should be withdrawn.

3. Esser fails to teach or suggest all the claim limitations

Third, Esser fails to teach or suggest all the claim limitations recited in Applicant's independent claims 1, 20, and 29.

In particular, Esser fails to teach or suggest Applicant's combination recited in claim 1, including at least a "rapid deploy containment device adapted to receive and retain hazardous waste", "the containment device in the erect open configuration forming a receptacle region, and "a canopy connected to at least two hubs and residing in the receptacle region of the erect open containment device."

Further, Esser fails to teach or suggest Applicant's combination recited in claim 20, including at least a "rapid deploy containment device adapted to receive and retain hazardous waste", the containment device comprising "a canopy affixed to at least two hubs proximate the top portion of the containment device in the open erect configuration to form the receptacle region capable of receiving and retaining hazardous chemicals."

Finally, Esser fails to teach or suggest Applicant's combination recited in claim 29, including at least "a frame movable between a closed configuration...and an open configuration, in which the frame forms a plurality of walls defining a central space", wherein the frame comprises "a plurality of second hubs configured to engage a support surface, each second hub receiving second ends of at least two respective rods", and "a receptacle comprising a plurality of attachment portions secured to respective first hubs, wherein the receptacle collapses when the frame is in the closed configuration and the receptacle forms a containment volume in the central space when the frame is in the open configuration."

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Because Esser fails to teach or suggest all the claim limitations recited in Applicant's independent claims 1, 20, and 29, as required by M.P.E.P. § 2143, Applicant respectfully submits that a prima facie case of obviousness has not been established and that the rejection should be withdrawn.

C. Claims 1-9, 20, 21, and 29-34 are patentable over Zeigler or Esser in view of Lobbert

In the Office Action, claim 13 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Zeigler in view of U.S. Patent No. 4,883,189 to Lobbert. Claim 13 was further rejected under 35 U.S.C. § 103(a) as being unpatentable over Esser in view of Lobbert.

Lobbert was cited for its teaching of "a device for collecting waste wherein a container (7) on the interior of a device is lined by a removable liner (18)." However, Lobbert is completely silent as to the features recited in Applicant's claims 1, 20, and 29. Thus, Lobbert fails to overcome the deficiencies of Zeigler and Esser discussed above.

Thus, Applicant respectfully submits that independent claims 1, 20, and 29 are patentable over the prior art applied in the Office Action. Additionally, claims 2-9, 13, and 21 and claims 30-34 depend from claims 1 and 29, respectively, and therefore include the same patentable combination of elements, as well as reciting additional elements that further distinguish over the applied prior art. Accordingly, Applicant respectfully submits that claims 2-9, 13, 21, and 30-34 are also allowable.

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IV. Conclusion

In view of the foregoing amendments and remarks, Applicant respectfully requests the reconsideration of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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APPENDIX TO AMENDMENT

Version with Markings to Show Changes Made

Amendments to the Claims

1. (Three Times Amended) A rapid deploy containment device adapted to receive and retain hazardous waste, the containment device being [moveable] convertible between an erect open configuration and a collapsed compact configuration, the containment device in the erect open configuration forming a receptacle region, the containment device comprising:

rods, each rod being pivotally joined to another rod by a scissors connection intermediate the ends of said rod;

hubs, each hub receiving an end portion of at least two rods along separate axes of each hub, the end portion being pivotally joined to said hub, where the end portion pivots in relation to said hub along a single axis of revolution, each end portion pivoting along separate axes of revolution in relation to said hub,

each end portion being rotatable about its axis of revolution from the collapsed compact configuration, where all of said rods are substantially parallel to one another, to the erect open configuration, the containment device articulating along three axes, whereby the containment device [collapses] changes between the compact and open configurations in height, length and width; and

a canopy connected to at least two hubs and residing in the receptacle region of the erect open containment device.

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13. (Twice Amended) The containment device recited in claim 1, further comprising a liner positioned in the receptacle region adjacent said canopy, said liner being made of a material resistive to hazardous chemicals.

20. (Three Times Amended) A rapid deploy containment device adapted to receive and retain hazardous waste, the containment device being convertible between an erect open configuration and a collapsed compact configuration, the containment device comprising:

rods, each rod being pivotally joined to another rod by a scissors connection intermediate the ends of said rod;

hubs, each hub receiving an end portion of at least two rods along separate axes of each hub, the end portion being pivotally joined to said hub, where the end portion pivots in relation to said hub along a single axis of revolution,

each end portion being rotatable about its axis of revolution from the collapsed compact configuration, where all of said rods are substantially parallel to one another and where said hubs are positioned adjacent one another at each end portion of the collapsed compact configuration, to the open erect configuration, wherein the hubs positioned proximate [the] a top portion of the collapsed compact configuration descend downward toward [the] a bottom portion of the containment device when converting from the collapsed compact configuration to the erect open configuration and wherein the containment device articulates between the collapsed compact configuration and the erect open [configurations] configuration in height, length, and width; and

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a canopy affixed to at least two hubs proximate the [upper] top portion of the containment device in the open erect configuration to form the receptacle region capable of receiving and retaining hazardous chemicals.

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